

1 1. (Previously amended) A method of fabricating an electronic device, comprising  
2 the steps of:

3 a) providing a coil of conductor and an insulation, said coil of  
4 conductor having a coil outer surface, said insulation on said coil  
5 outer surface;

6 b) forming openings in portions of said insulation on said coil outer  
7 surface and exposing conductor in said openings for external  
8 contacts; and

9 c) dicing completely through said coil to provide a plurality of short  
10 coils, wherein each said short coil has at least one said opening in  
11 said insulation.

1 2. (Previously amended) The method as recited in claim 74, wherein said providing  
2 step (a) comprises the step of providing a tube and a wire, and winding said wire  
3 around said tube.

1 3. (Previously amended) The method as recited in claim 2, wherein, in said  
2 providing step (a), said wire comprises two ends, wherein neither of said ends  
3 extends from said coil for contacting.

1       4. (Previously amended and withdrawn from consideration) The method as recited  
2       in claim 1, further comprising the steps of:

3

4           e) providing a substrate; and

5

6           f) surface mounting said coil to said substrate.

1       5. (Previously amended and withdrawn from consideration) The method as recited  
2       in claim 4, wherein, in said providing step (e), said substrate comprises a printed  
3       circuit board, a ceramic substrate, a flexible material, or an integrated circuit.

1       6. (Previously amended and withdrawn from consideration) The method as recited  
2       in claim 4, wherein said surface mounting step (f) comprises the step of  
3       electrically connecting conductor exposed in said opening in said insulation to  
4       said substrate.

1       7. (Original and withdrawn from consideration) The method as recited in claim 6,  
2       further comprising the step of providing a solder or conductive polymer, wherein  
3       said electrical connecting step comprises joining with said solder or said  
4       conductive polymer.

1       8. (Original and withdrawn from consideration) The method as recited in claim 7,  
2       wherein said joining step comprises providing solder paste between said  
3       substrate and said conductor exposed in said window and heating to reflow said  
4       solder.

- 1 9. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 4, further comprising the step of mounting additional electronics on said  
3 substrate.
- 1 10. (Original and withdrawn from consideration) The method as recited in claim 9,  
2 further comprising the step of connecting said additional electronics to said coil.
- 1 11. (Original and withdrawn from consideration) The method as recited in claim 10,  
2 further comprising the step of providing a housing for holding said coil, said  
3 substrate, and said additional electronics.
- 1 12. (Original and withdrawn from consideration) The method as recited in claim 11,  
2 further comprising the step of hermetically sealing said housing.
- 1 13. (Original and withdrawn from consideration) The method as recited in claim 11,  
2 further comprising the step of providing pins for external connection through said  
3 housing.
- 1 14. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 11, wherein said coil and said additional electronics comprise a sensor.
- 1 15. (Original and withdrawn from consideration) The method as recited in claim 14,  
2 wherein said sensor comprises a variable reluctance transducer.
- 1 16. (Original and withdrawn from consideration) The method as recited in claim 14,  
2 wherein said sensor is for measuring strain, displacement, acceleration, force, or  
3 pressure.

- 1 17. (Original and withdrawn from consideration) The method as recited in claim 14,  
2 further comprising the step of providing a circuit to correct for temperature  
3 variation.
- 1 18. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 17, wherein said circuit is integrated within said housing.
- 1 19. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 17, wherein said circuit is located within signal conditioning electronics  
3 separate from said housing.
- 4
- 5 20. (Original and withdrawn from consideration) The method as recited in claim 9,  
6 wherein said additional electronics provides excitation or synchronous  
7 demodulation.
- 1 21. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 9, wherein said additional electronics converts an ac waveform to a dc  
3 voltage.
- 1 22. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 1, further comprising the step of enclosing said coil in a housing and  
3 hermetically sealing said housing.
- 1 23. (Previously amended and withdrawn from consideration) The method as recited  
2 in claim 1, wherein said step of forming openings in portions of said insulation  
3 comprises laser ablating said insulation.

- 1 24. (Previously amended and withdrawn from consideration) The method as recited
- 2 in claim 23, wherein said step of laser ablating said insulation, comprises
- 3 directing light from a laser on said insulation.
  
- 1 25. (Previously amended and withdrawn from consideration) The method as recited
- 2 in claim 23, wherein said coil comprises a plurality of turns of said wire and
- 3 wherein said step of laser ablating said insulation comprises opening said
- 4 insulation over a plurality of said turns of wire.
  
- 1 26. (Previously amended and withdrawn from consideration) The method as recited
- 2 in claim 23, wherein said step of laser ablating said insulation comprises ablating
- 3 a ring shaped opening in said insulation.
  
- 1 27. (Original) The method as recited in claim 1, wherein said insulation comprises
- 2 polyimide.
  
- 1 28. (Previously amended) The method as recited in claim 75, further comprising the
- 2 step of providing a structure for holding position of said core within said tube.
  
- 1 29. (Previously amended) The method as recited in claim 28, further comprising the
- 2 step of providing a structure for resetting position of said core within said tube.
  
- 1 30. (Previously amended) The method as recited in claim 29, wherein said structure
- 2 for resetting position of said core within said tube comprises an electronically
- 3 controllable clamp.
  
- 1 31. (Original) The method as recited in claim 30, wherein said electronically
- 2 controllable clamp comprises a shape memory alloy.

1 32. (Previously amended) The method as recited in claim 29, wherein said structure  
2 for resetting position of said core further comprises a spring so said core can snap  
3 to a new position when said clamp is released.

1 72. (Previously added) The method as recited in claim 1, wherein said step of  
2 forming openings in portions of said insulation comprises abrading said  
3 insulation.

1 73. (Previously added and withdrawn from consideration) The method as recited in  
2 claim 1, wherein said step of forming openings in portions of said insulation  
3 comprises chemically etching said insulation.

1 74. (Previously added) The method as recited in claim 1, wherein said providing step  
2 (a) comprises providing said coil of conductor and said insulation on a tube.

1 75. (Previously added) The method as recited in claim 74, further comprising the  
2 step of providing a movable core within said tube for adjusting inductance of said  
3 coil.

1 76. (Previously added) The method as recited in claim 75, further comprising the  
2 steps of:  
3  
4 e) providing a substrate; and  
5  
6 f) surface mounting said coil to said substrate.

- 1 77. (Previously added) The method as recited in claim 76, wherein, in said providing
- 2 step (e), said substrate comprises a printed circuit board, a ceramic substrate, a
- 3 flexible material, or an integrated circuit.
- 1 78. (Previously added) The method as recited in claim 76, wherein said surface
- 2 mounting step (f) comprises the step of electrically connecting conductor
- 3 exposed in said opening in said insulation to said substrate.
- 1 79. (Previously added) The method as recited in claim 78, further comprising the
- 2 step of providing a solder or conductive polymer, wherein said electrical
- 3 connecting step comprises joining with said solder or said conductive polymer.
- 1 80. (Previously added) The method as recited in claim 79, wherein said joining step
- 2 comprises providing solder paste between said substrate and said conductor
- 3 exposed in said window and heating to reflow said solder.
- 1 81. (Previously added) The method as recited in claim 76, further comprising the
- 2 step of mounting additional electronics on said substrate.
- 1 82. (Previously added) The method as recited in claim 81, further comprising the
- 2 step of connecting said additional electronics to said coil.
- 1 83. (Previously added) The method as recited in claim 82, further comprising the
- 2 step of providing a housing for holding said coil, said substrate, and said
- 3 additional electronics.
- 1 84. (Previously added) The method as recited in claim 83, further comprising the
- 2 step of hermetically sealing said housing.

- 1 85. (Previously added) The method as recited in claim 83, further comprising the  
2 step of providing pins for external connection through said housing.
- 1 86. (Previously added) The method as recited in claim 83, wherein said coil and said  
2 additional electronics comprise a sensor.
- 1 87. (Previously added) The method as recited in claim 86, wherein said sensor  
2 comprises a variable reluctance transducer.
- 1 88. (Previously added) The method as recited in claim 86, wherein said sensor is for  
2 measuring strain, displacement, acceleration, force, or pressure.
- 1 89. (Previously added) The method as recited in claim 86, further comprising the  
2 step of providing a circuit to correct for temperature variation.
- 1 90. (Previously added) The method as recited in claim 89, wherein said circuit is  
2 integrated within said housing.
- 1 91. (Previously added) The method as recited in claim 89, wherein said circuit is  
2 located within signal conditioning electronics separate from said housing.
- 1 92. (Previously added) The method as recited in claim 81, wherein said additional  
2 electronics provides excitation or synchronous demodulation.
- 1 93. (Previously added) The method as recited in claim 81, wherein said additional  
2 electronics converts an ac waveform to a dc voltage.

- 1 94. (Previously added) The method as recited in claim 75, further comprising the  
2 step of enclosing said coil in a housing and hermetically sealing said housing.
- 1 95. (Previously added) The method as recited in claim 75, wherein said step of  
2 forming openings in portions of said insulation comprises laser ablating said  
3 insulation.
- 1 96. (Previously added) The method as recited in claim 95, wherein said step of laser  
2 ablating said insulation, comprises directing light from a laser on said insulation.
- 1 97. (Previously added) The method as recited in claim 96, wherein said laser  
2 comprises an excimer laser.
- 1 98. (Previously added) The method as recited in claim 95, wherein said coil  
2 comprises a plurality of turns of said wire and wherein said step of laser ablating  
3 said insulation comprises opening said insulation over a plurality of said turns of  
4 wire.
- 1 99. (Previously added) The method as recited in claim 95, wherein said step of laser  
2 ablating said insulation comprises ablating a ring shaped opening in said  
3 insulation.
- 1 100. (Previously added) The method as recited in claim 2, wherein said wire  
2 comprises an insulated wire and said step (a) comprises winding said insulated  
3 wire around said tube.
- 1 101. (Previously added and withdrawn from consideration) The method as recited in  
2 claim 24, wherein said laser comprises an excimer laser.

1 102. (Previously amended) A method of fabricating an electronic device, comprising  
2 in order, the steps of:

3 a) providing a coil of conductor and an insulation, said coil of  
4 conductor having a coil outer surface, said insulation on said coil  
5 outer surface;

6 b) forming openings in portions of said insulation on said coil outer  
7 surface and exposing conductor in said openings of said coil for  
8 external contacts;

9 c) dicing through said coil to provide a plurality of short coils,  
10 wherein each said short coil has at least one said opening in said  
11 insulation;

12 d) providing a substrate;

13 e) surface mounting said coil to said substrate;

14 f) mounting additional electronics on said substrate;

15 g) connecting said additional electronics to said coil; and

16 h) providing a housing for holding said coil, said substrate, and said  
17 additional electronics.

1 103. (Previously amended) A method of fabricating an electronic device, comprising  
2 in order, the steps of:

3 a) providing a coil of conductor, an insulation, and a tube, said coil of  
4 conductor having a coil outer surface, said insulation on said coil  
5 outer surface, wherein said tube has a tube outer surface and  
6 wherein said coil of conductor and said insulation are on said tube  
7 outer surface;

8 b) forming openings in portions of said insulation on said coil outer  
9 surface and exposing conductor of said coil for contacts;

10 c) dicing through said coil to provide a plurality of short coils,  
11 wherein each said short coil has at least one said opening in said  
12 insulation; and

13 d) providing a movable core within said tube for adjusting inductance  
14 of said coil.